

# 小六數學溫習摘要

Primary 6 Mathematics Revision Summary

## 6M3 周界 (二)

### 6M3 Perimeter II

計算圓形或含圓弧圖形的周界時，先沿外圍找出每一段邊界，再分別處理圓弧和直線。

Trace the entire boundary first, then calculate circular arcs and straight segments separately.

### 學習重點

#### What to learn

- 任何圓的圓周與直徑之比都是  $\pi$ ；計算時使用題目指定的  $\pi$  近似值。  
The ratio of a circle's circumference to its diameter is  $\pi$ ; use the approximation specified.
- 直徑  $d$  是半徑  $r$  的 2 倍；圓周可寫成  $C = \pi d$  或  $C = 2\pi r$ 。  
With  $d = 2r$ , circumference is  $C = \pi d = 2\pi r$ .
- 已知圓周，可先用  $d = C \div \pi$  求直徑，再除以 2 求半徑。  
Given circumference, find  $d = C \div \pi$ , then halve it to obtain the radius.
- 半圓弧長是圓周的一半；半圓圖形的周界還包括一條直徑。  
A semicircular arc is half a circumference, but the perimeter of the semicircle also includes its diameter.

### 考試前必記

#### Remember before a test

- 題目中的 3.14 或  $22/7$  是  $\pi$  的近似值；不要在同一題隨意換用不同近似值。  
3.14 and  $22/7$  approximate  $\pi$ . Use the same specified value throughout a problem.
- 四分之一圓的周界，包括四分之一條圓周和兩條半徑。  
A quarter-circle perimeter consists of a quarter of the circumference plus two radii.
- 拼合圖形只計外露的邊；位於內部的接合線不屬於周界。  
Count exposed edges only; internal joins are not part of the perimeter.
- 滾動而沒有滑動的圓輪，每轉一周前進一個圓周長；路程要先與圓周統一單位。  
A wheel rolling without slipping travels one circumference per revolution; use matching units.

## 常見錯誤

### Common mistakes

- 把題目給的直徑當成半徑，令圓周多乘了 2。  
Mistaking diameter for radius and introducing an extra factor of two.
- 計半圓周界時只算弧長，漏掉直徑。  
Omitting the diameter from a semicircle's perimeter.
- 把幾個圖形的完整周界直接相加，連內部接合邊也計入。  
Adding complete perimeters and counting internal joins.
- 周界答案用了平方單位；周界是長度，應用 cm、m 等單位。  
Using square units for perimeter, which is a length.

## 快速自查

### Quick check

|                                                                               |                                                                                                   |
|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> 能分辨半徑和直徑<br>I can distinguish radius and diameter.   | <input type="checkbox"/> 能按指定 $\pi$ 值求圓周<br>I can calculate circumference using the given $\pi$ . |
| <input type="checkbox"/> 能找齊外圍的弧和直線<br>I can identify every boundary segment. | <input type="checkbox"/> 能由圓周求直徑或半徑<br>I can recover diameter or radius.                          |

## 自編例題

Original worked example

一塊半圓形名牌的直徑是 16 cm，要沿整個外圍貼飾帶。需多少厘米？取  $\pi = 3.14$ 。

A semicircular nameplate has a diameter of 16 cm. How many centimetres of ribbon are needed around its entire boundary?  
Use  $\pi = 3.14$ .

思考與解答：弧長 =  $16 \times 3.14 \div 2 = 25.12$  cm；周界 =  $25.12 + 16 = 41.12$  cm。

Reasoning and answer: Arc length =  $16 \times 3.14 \div 2 = 25.12$  cm; perimeter =  $25.12 + 16 = 41.12$  cm.

再試與答案：圓周為 56.52 cm，取  $\pi = 3.14$ ，半徑是多少？答案： $56.52 \div 3.14 \div 2 = 9$  cm。

Further practice and answer: A circle has a circumference of 56.52 cm. Using  $\pi = 3.14$ , find its radius. Answer:  $56.52 \div 3.14 \div 2 = 9$  cm.